Disruption of place cell remapping by scopolamine during aversive learning

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Background

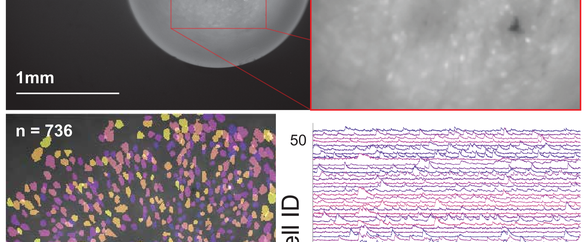
Place cells exhibit location specific firing that can be modified by experience ("remapping") [1-3]

Scopolamine (a muscarinic AcH antagonist) blocks the consolidation of an acquired fear [4,5]

Methods

Surgery and Behavior

AVV9-Syn-GCamp7s injected below CA1 pyr
GRIN lens implanted above CA1 after aspiration



Behavior

Ca^{2+} Imaging

Imaging motion corrected and source extraced via CaImAn (Giovannucci et al. 2019)

Results

Scopolamine blocks fear retention

Scopolamine did not disrupt spatial encoding

MiniLFOV development

Shock experience induces location specific remapping, which is blocked by scopolamine

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References

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